

THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XV., No. 9

LOS ANGELES, CAL., AUGUST 1, 1896

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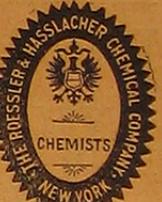
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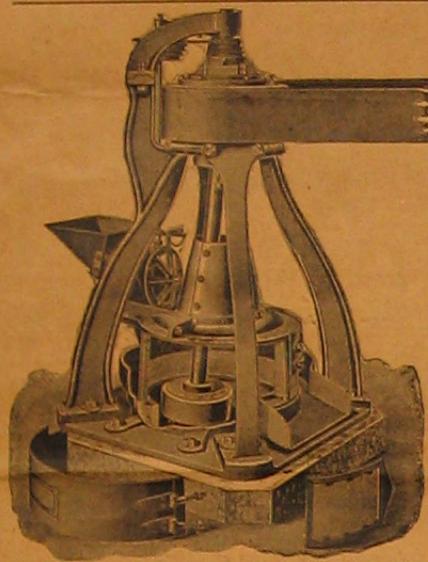
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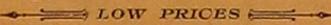
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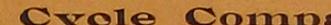
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A CORRECTION.

In last issue of THE MINING AND METALLURGICAL JOURNAL, we gave the date of the closing of the Great Register as August 19th, which is an error. It should have been August 9th. If you do not register before that date, you will be debarred from voting.

Every miner, and every person interested in mining, and every person who has the best interest of this country at heart ought to register and vote in the interest of free coinage of silver. It is the American policy, and in the interests of all American industries—whether railway, agricultural, manufacturing or mining.

THE Editor of this journal went off on a holiday and prospecting tour a few weeks ago, and late reports inform this office that he has been married to a most estimable lady. The junior ability of this office takes this occasion to inform our patrons who take a kindly interest in the Editorial Head, of our chief's good fortune, for as King Solomon, the American poet, or some other poetical genius wrote, "He who findeth a wife findeth a good thing and obtaineth favor of the Lord," but our Editor has struck a bonanza, he has found favor with both Lord and Lady.

MR. MORTON FREWEN, the conspicuous English bimetallist, combats Mr. Whitney's idea that the agitation of the Silver Question over here will destroy the sentiment in favor of the monetary use of both metals in Europe. He ought to know, and he says the adoption of silver coinage in this country is the very thing that will stimulate bimetallism in Europe.

THE friends of silver in Minnesota have nominated John Lind for governor. Mr. Lind is a Norwegian and for several terms was a Republican representative in Congress

from that state. Sentiment among Republicans in favor of free silver coinage is extensive and strong. The only question is how many will consider this or the tariff the more important.

IT IS ASTONISHING how prevalent the idea is that from some innate quality possessed by gold it has a definite and unchangeable value. Nothing is more false and absurd. The commodity-value of gold does not fluctuate because at the mints in all the leading nations of Europe and in the United States 25-8 grains can be coined into one hundred cents at the will of the owner. Here this is not the case, the price of gold in the market would fluctuate like that of any other commodity. The fact that it can be changed from commodity into money at the will of the possessor, gives gold its divine character. Besides this any one can take uncirculated gold to the Bank of England and get its coinage value, for a law of Great Britain compels the bank to buy it at that price. That law was enacted for two objects, one was to preserve stability in the commodity price of gold and the other to secure to Great Britain continue of the gold resources of the world.

THE CHICAGO CONVENTION.

Whatever may be thought as to the platform which that convention adopted, one thing is certain, and it is, that the great preponderating element was in earnest and possessed and manifested a courage unusual to political parties, and especially such as have been long in existence, and have become accustomed to maneuvering to gain or retain power. All new parties are characterized by boldness.

Since the war of the rebellion, the east, and especially New York, has dominated in the Democratic party. Circumstances favored this. New York went to the late Chicago convention in force, supported almost solidly by all the states east of Ohio and north of the Potomac. The delegates from nearly all that rich and prosperous section were for the single gold standard. It was a formidable array, especially when it is considered that it has been the votes of New York, New Jersey and Connecticut that have settled the elections in favor of the Democrats for both terms of Mr. Cleveland. The money to defray the expenses of presidential campaigns has been supplied from the east, and by the friends of the single gold standard.

The spirit of the producing classes of the south and west had become aroused, and they resolved no longer to submit to the domination of Wall street and the gold trust.

The convention adopted the plain proposition of free and unlimited coinage of silver on the old ratio of 16 to 1, or, in other words, it resolved in favor of the money of the Constitution, and of those who framed it and administered it for the first eighty years of our national existence. The truth is, both the great political parties of the country for twenty-five years have been dominated by the gold power, whose influence had become as potent as that of slavery over the action of the Democratic and Whig parties. Whatever men may think touching the principles announced in the Chicago platform, the courage displayed will commend the convention to every manly American heart. The old leaders that had trimmed to every breeze which brought votes were shuffled off, and new men came to the front. It constituted a complete revolution in the party and may be

the beginning of a new and better era. It must be admitted that the will of the people rather than of the bosses was respected. That convention started the rolling of the ball of monetary reform, and the great question is, will it be victorious.

Is the platform Populist?

It is so charged as a matter of disrespect. Populism may have its isms and foolish ideas, but that it embraces some good things, no one who is intelligent and candid has denied.

As has been said, the platform pronounces for silver coinage, the Populists believe in that, and so do a great many Republicans. It pronounces against national banks of issue, and the Populists hold the same view, and so did Thomas Jefferson, that is to say, the principles which Jefferson held on the money question are clearly hostile to our national banking system. There are a vast number of men in all parties who cannot see why a note on which Uncle Sam is principal is not as good as one which he indorses.

No doubt the Chicago convention presented a defined issue on the financial as well also as did the Republican convention at St. Louis. On this question the battle will be fought out: Shall the policy be the single gold measure, or the bimetallic measure, gold and silver coined without limit, on terms of equality and at a fixed ratio? On this issue men will array themselves, except as to such as may think some other issue paramount. While the convention was explicit in defining its financial policy, the nominations were consistent with that policy. Especially is this true as to Mr. Bryan, for he has been a sincere, earnest, active and able advocate of the doctrine proclaimed by the convention for many years.

THE DEVELOPMENT OF THE SOUTHWEST.

The object to be attained is the settlement of the rich mining and irrigation districts of the southwestern states. The means necessary to accomplish this end have already in part been referred to in these columns, under several municipal measures which are necessary to accomplish this most industrial project of reclaiming the desert. The pioneer in this work is the prospector, and as a guide to him and to his followers the miners and traders, it is necessary to place sign posts on cross roads, and to indicate where water is to be found on the trail.

The development of water, by increasing the storage capacity of it in natural tanks, by building small dams at their outlet, and by sinking wells in dry washes, to reach underground channels, and in placing short pipe lines from water in hilly, inaccessible places, so as to bring it to a road or trail, are among the means and ways in which our prospectors and miners will require to bring this matter before the supervisors of their respective districts. The supervisors of the desert district counties are again reminded of the necessity of improving the facilities for obtaining drinking water on the desert roads, as it is as useful as bridges over streams in the north, and is undertaken as municipal work in the arid districts of Australia. The residents of the counties of the southwest are again reminded of this necessary work in aid of mining and settlement. Make your county roads on the desert fit to travel on, by furnishing free water to prospectors and travelers, as the railway companies do along their lines on the desert, and capital will come in and buy your prospects and work their mines. Many of the older mining districts have

reached the stage of progress where the primitive mule freight wagon train is too slow and too expensive to meet the demands of increasing trade. The narrow-gauge two-foot track tramway has for more than 30 years, under steam power in England, and of recent years under electric power in the United States, demonstrated that, for mining districts with rough country and steep grades, it is the most economical feeder to the standard gauge line of railway. The electric power plant can be located at any point where fuel and water are available. Freight and passengers can both be carried at lower cost than by horse power. For the desert mining camp, this is the most suitable means of freighting supplies and machinery in and out.

On account of the comparatively steep grades and sharp curves which can be used on a two-foot track, the first cost for grading is about equal to an ordinary wagon road, and the cost of plant less than any other system, as mine cars with suitable brakes can be used. As a feeder to the broad or standard gauge railway, this system is the best means of furnishing freight and opening up a new mineral district. The mining camps on both sides of the Santa Fe and Southern Pacific railways, and on each side of the Colorado River, can best be developed by such tramways. There is no experiment about the system, as it has been in use for years and hundreds of tons a day can be transported, in addition to carrying passengers on the trains. In Australia, the railways are owned and operated by the government, and the roads paid for themselves in 10 years, and yield from profits half the expenses of the government of the colonies.

The mining and irrigation industries of the Southwestern States could best be developed by issuing railway and irrigation state bonds, for building two-foot gauge roads to mining districts, and irrigation dams for the storage of water, with ditches and pipe lines to the land, and to take advantage of the preliminary and excellent work undertaken by the Federal Geological Survey, in aid of irrigation in the arid districts of the Southwestern States.

As there is profitable investment in these enterprises for private corporations, there is more benefit and profit in having these worthy enterprises undertaken and conducted by engineers under authority of our several State Legislatures, especially at a time when our silver mines are closed down, and there is a need of public works for the employment of labor, and to increase the available agricultural land area and aid mining development.

THE ST. LOUIS CONVENTIONS.

In these the republican convention, which assembled June 16, is not included. We have reference to the two which commenced their sessions on the 22d of July. The silverite was not a party convention, but one that represented elements from all parties that were in substantial accord on the money question. It was an earnest, considerate, intelligent and patriotic body and performed its work without rangling and with decorum. The populist was strictly a party convention, but it cannot be said that its proceedings displayed that candor, sincerity, and unselfishness which ought to be expected from a body of men who claim to have the best interests of the people at heart, and whose organization is called the People's party. This does not apply to the whole body of the convention for in it were large numbers who were conservative, and manifested a disposition to sub-

ordinate party and personal interests to the public good.

The follies committed in the populist convention is a death knock to the party. The displays indicate copiousness, insincerity or something worse. There was expressed a great fear that the party would disappear. What of party anyway in the presence of a great principle. All the populists are seceders from one of the old parties and they speak of it with pride and as an evidence of their independence and patriotism. The crankism, ranting, and factitism manifested were promoted by little men who did not want to loose their prominence by uniting with other elements in promoting the common welfare. The sooner the party gets rid of Cyclone Davis, Ignatius Donnelly, John S. Coxey and some others who figured in the St. Louis populist convention the better it will be for the cause of humanity. No party can ever achieve victory under such leadership, nor maintain an organization very long.

The country for some years has been in a distressful condition, and the people have been inquiring into the cause or causes, and seeking to devise a remedy. A large number of republicans, a great preponderance of democrats, and all the populists are agreed that an unwise, deficient, and unjust money system is the chief course of existing evils, and the proposition has been and is to unite all these elements in political action and in behalf of financial measures that will bring relief. Free coinage of both gold and silver on a ratio of 16 to 1, and making the coins a legal tender for all debts and dues public and private, and redemption money for all paper circulation professedly meets the approval of all these elements. It would seem therefore that fusion ought not to have encountered obstruction.

The democrats at Chicago adopted a platform and nominated candidates. They went to the very extent of these lines of agreement, indeed they went farther, and declared against banks of issue and in favor of the issuing of all paper money by the government directly. The platform contains a complete financial system which comprises gold and silver coins with unlimited coinage, paper issued by the government in sufficient volume to supply the wants of the country, redeemable in gold or silver coins. The Chicago convention showed its courage as well as its sincerity by unloading the Cleveland administration and cutting loose from all responsibility for its financial policy. The convention in every feature of its work was anti-trust and anti-monopoly. The silver convention at St. Louis acted with common sense and prosperity, but it was otherwise with the populists, they were querulous and refractory. It was expected that the advances made by the democrats would be promptly accepted and that their extended hand of fellowship on the line of common convictions would be grasped with delight. The democrats constitute the largest of the political elements in favor of a reform in our monetary system. It is proper that they should lead off and occupy the right of the line in the pending contest. The monetary issue is presented squarely and will be fought out without dispute as to what the combatants propose. The factiousness displayed by a portion of the populist delegates at St. Louis will do no harm. In fact riddance of the intractable and unreasonable will do good as it will eliminate the element which would drive off progressive, but at the same time, conservative men.

WHO DEMONETIZED SILVER?

Frederick A. Luckenbach, being first duly sworn on oath, deposes and says: I am 62 years of age; I was born in Buck's county, Penn.; I removed to the city of Philadelphia in the year 1856, and continued to reside there until 1866, when I removed to the city of New York. In Philadelphia I was in the furniture business. In New York I branched into machinery and inventions, and am the patentee of Luckenbach's pneumatic pulverizer, which machines are now in use generally in the eastern part of the United States and Europe. I now reside in Denver, having removed from New York two years ago. I am well known in New York. I have been a member of the produce exchange and am well acquainted with many members of that body. I am well known by Mr. Erastus Wyman.

In the year 1865 I visited London, Eng., for the purpose of placing there Pennsylvania oil properties, in which I am interested. I took with me letters of introduction to many gentlemen in London, among them one Mr. Ernest Seyd, from Robert M. Foust, ex-treasurer of Philadelphia. I became well acquainted with Mr. Seyd, and with his brother Richard Seyd, who, I understand, is still living. I visited London thereafter every year, and at each visit renewed my acquaintance with Mr. Seyd, and upon each occasion became his guest one or more times, joining his family at dinner or other meals.

In February, 1874, while on one of these visits, and while his guest for dinner, I, among other things, alluded to other things afloat, of parliamentary corruptions, and expressed astonishment that such corruption should exist. In reply to this he told me he could relate facts about the corruption of the American Congress that would place it far ahead of the English parliament in that line. So far, the conversation was at the dinner table between us. His brother Richard, and others, were there also, but this was table talk between Mr. Ernest Seyd and myself. After the dinner ended he invited me into another room, where he resumed the conversation about legislative corruption, he said: "If you will pledge me your honor as a gentleman not to divulge what I am about to tell you while I live, I will convince you that what I said about the corruption of the American Congress is true." I gave him the promise and he then continued: "I went to America in the winter of 1872-3, authorized to secure, if I could, the passage of a bill demonetizing silver; it was to the interest of those I represented—the governors of the Bank of England—to have it done. I took with me £100,000 sterling, with instructions that if that was not sufficient to accomplish the object to draw for another £100,000 or as much more as was necessary." He told me German bankers were also interested in having it accomplished. He said he was the financial adviser of the bank. He said: "I saw the committees of the house and senate, and paid the money and stayed in America until I knew the measure was safe." I asked if he would give the names of the members to whom he paid the money, but this he declined to do. He said: "Your people will not now comprehend the far-reaching extent of that measure, but they will in after years. Whatever you may think of corruption in the English parliament, I assure you I would not have dared to make such an attempt here as I did in your country." I expressed my shame to him for my country-

men in our legislative bodies. The conversation drifted into other subjects, and after that, though I met him many times, the matter was never again referred to.

[SIGNED] FREDERICK A. LUCKENBACH.

Subscribed and sworn to before me at Denver, the ninth day of May, A. D. 1892.

[SIGNED] JAMES A. MILLER.

Clerk Supreme Court, State of Colorado.
[SEAL]

That this affidavit is authentic can be verified by hundreds of men both in Colorado, New York and Philadelphia, who stand ready to vouch for the truthfulness of Mr. Luckenbach, while the whole transaction is familiar to hundreds of people conversant with legislation during the exciting times from '70 to '75.

The advocates of the single gold standard will not acknowledge that they are advocating a British or European policy in demanding a continuation of the twenty years or more of British monometalist rule at Washington. It must have cost the British and European bankers a large amount of money since 1872-3 to keep Congress and the Senate and the large army of American single gold standard papers throughout the United States working in the foreigners' interest and against that of American silver. But the profits in the business are large, they could well afford to pay a few odd millions. The \$30,000,000 of American silver produced last year when purchased at half price by England and when coined into rupees for India would buy \$60,000,000 of wheat and cotton, half the value it used to have in the markets of the world. \$30,000,000 a year is a good profit for investing a few odd millions in purchasing legislation and the untruthful utterances of the single gold standard advocates. England demonetized silver in the United States, and then demonetized gold in India, and at the same time adopted a single silver standard for India, hence the profits in the double transaction. What the United States requires is the unlimited coinage of both gold and silver (at the ratio of 16 to 1), as stipulated in the constitution of the United States, or can the Supreme Court (which seems to be the highest legislative authority in the land) not be induced to find on American principles that the single gold standard is British rule and unconstitutional.

CORRESPONDENCE

COLORADO.

BOULDER, COLO., July 25, '96.

EDITOR JOURNAL:—I have received several copies of your valuable MINING JOURNAL, but have failed to see any mining news from Boulder county properties which are second to none in the great mining industrial state of Colorado. There are many persons who were formerly residents of this city that are now in the beautiful and salubrious city of Los Angeles, enjoying its charming environments, who may be interested in a few words from their old home at the base of the Rocky Mountains, hence this intrusion on your valuable space.

The Dew Drop mine, situated in California gulch, Ward Mining District, is developed by a tunnel on the trend of the vein 960 feet long. Throughout the entire developments, the property has shown a superb vein of mineral. At this writing, the ore body is 15 feet between walls; the smelting ore yields 4½ ounces gold for four feet thick, while the

remaining eleven feet is composed of an excellent quality of milling stuff, which is being utilized by the company's 50-ton concentrating mill. This company has discovered a vein paralleling the main lode, which is four feet thick. Half of the entire mineralized matter is smelting ore that averages \$60 per ton. Crosscuts have been made at stated intervals, from 20 to 30 feet in the north wall, through which the parallel vein is being operated. The mineral output from this property is immense.

The Utica mine at Ward has an annual production of about \$250,000, which has been carried on for the past four or five years, giving the company a dividend of from \$15,000 to \$20,000 per month.

The ore is treated by the company's stamp mill and smelters in the valley.

The White Pine is a prospect on which a company has been recently organized. The deepest shaft on the property is not over 60 feet, yet the mine has paid all expenses of development, and for placing a first-class plant of machinery over the mine for hoisting purposes.

Forty tons of top quartz have been shipped to the Electro-chemical Works of this city for treatment. No effort has been made to select the stuff for this process, yet the Marshall has paid a good round price for the quartz which has been taken from along the surface of the lode.

The Slide is a telluride mine, producing wonderfully rich sylvanite, that sells at \$10 per pound. The vein in bottom of 750-foot shaft is 12 inches thick of this marvelous ore, while the lower grades are shipped to the smelters and treated in the stamp mill.

From the Golden Age mine, leasers are taking out ore that runs over \$30 per pound, and the concentrates will sell at \$3 per pound. The last returns from twenty pounds of ore yielded thirty dollars a pound. This amount was paid the workmen after expenses of sampling and treating it were deducted.

In the Grand Central—Big Blossom mine, J. V. Sybrandt opened a pocket in the vein which produced ore that ran \$90 per pound. The telluride mines of Boulder county yield magnificent mineral, and when an ore chute is encountered, a big stake is made in a day. The regular shipments from the telluride mines of first class ore run about \$500 per ton, while from this grade is selected such mineral as above described.

W.M. RULE.

A New York paper gives the following figures relating to electrical development. The capital invested in electrical lighting is put at \$325,000,000; invested in private plants, \$200,000,000; capital invested in electric mining machinery, \$100,000,000; invested in 500,000 stationary motors, \$60,000,000. Concerns that use from 50 to 100 motors each are very numerous. It is estimated that more than 60 per cent of all the street and suburban roads are operated by electricity; number of trolley cars, 25,000; total miles, 12,000; combined capital of electrical railways, \$700,000,000; total investment in electrical industry is placed at \$1,410,000,000, covering a period of fifteen years; number of men estimated to be employed in electrical industries, 2,500,000.

The value of gold and silver extracted from the Batopilas mineral district, State of Chihuahua, Mexico, during the years 1892-'95, is as follows: Gold, \$655,582.76; silver, \$3,545,049.73; total, \$4,200,632.49.

Miscellaneous Mining News.

ARIZONA.

George Waddell is in Prescott from his R. A. M. gold quartz claim on Little Copper creek, where a tunnel is being run to strike the ledge. Two tons of ore shipped from this claim and twenty tons milled gave satisfactory results. There is now twenty-five tons of milling ore on the dump. This location which showed only a stringer vein a few months ago, bids fair to be a fine mine. The ore is similar to that of the Crowned King.

The machinery and material for the cable tramway to be erected by the United Globe mines, at Globe has arrived at Fort Thomas.

A new mill is to be erected at once on the Dolly mine, one mile below El Dorado Canyon. Some of the machinery goes up the river by boat while the balance is freighted from Kingman.

A. L. McKesson has received his first check of \$6000 for his interest in the Temple Bar gravel mines near Kingman. A French Syndicate are the purchasers it is now assured that the gravel will fly in that region before the snow does. Mr. McKesson thinks more gold will be extracted from the gravel bars of the Colorado than anywhere in the west. His White Hills silver mine is panning out big. The shaft is down 70 feet all in ore. He will ship a car in a few days.

It is reliable announced that the Mammoth mine in Pinal Co. will shortly start work again. The company has been reorganized in London and expects to begin operations soon.

Mr. Otto Moses, superintendent of the Ripsey mine, in Pinal county, arrived in Tucson July 18th. Under Mr. Moses' management, development work is going steadily on. The working shaft is now 510 feet deep, and there are over 400 tons of ore on the dump. The company which owns the Ripsey will exploit the mine thoroughly before putting machinery to work. Doubtless they will have a paying property, and the course they are pursuing is the most sensible one.

R. T. Tustin, of the Last Chance mine near Prescott, and S. J. Flemming, an eastern gentleman, have purchased the Yum Yum and Annie mines, Big Bug district, Yavapai County, owned by Henry Johnson and Messrs. Arnold, Baker and Lewis. The mines were sold for \$16,000 cash.

M. D. Lattin and George Defrance, members of the Printer Syndicate, arrived in Kingman July 12th, from the Chemehuevis placer fields. They had with them \$500 in gold, which they had taken out by dry washer process during the month of June. Owing to the intense heat they were unable to work only in the morning and evening. Mr. Defrance says that a great deal of the gravel in their gulch will run one dollar and fifty cents to the pan that from six hoppers they realized \$47.60. A hopper of sand will weigh about seventy-five pounds. The draw back to mining in the district is the lack of water but this difficulty will be overcome in the near future. Wells are now being sunk with fair prospects of getting good water. Where water has been obtained it is so strongly impregnated with magnesia that it cannot be used. About forty men are now in the district all are making money. Gold is found the entire length of the range and in the detached foothills.

Another shipment of silver ore from the Eclipse mine near Phoenix was to be made next Monday July 20th and the big freight teams had orders to return immediately as still another carload of rich ore worth about \$4,000 a car was ready for shipment. The Eclipse is the only silver mine in Arizona that works extensively, but Col. Wm. Herring is taking out good ore on the adjoining claim. Champion is also kept busy at the Silver King. With a fair price for silver it would again become a heavy producer of the white metal.

The Marie Mining Company has bonded one of Frank Langer's gold mines in the vicinity of El Dorado Canyon. The trade was made in Kingman July 15th and the first money paid over. The amount that will be paid for the property is said to be up in the thousands.

Geo. H. Sanford, the superintendent, who negotiated the purchase, was in Kingman last week superintending the shipping of a Kinkead mill to the mines across the river. The plant will handle between twenty and thirty tons of ore per day.

A flood last week took out a section of flume of the Senator mill.

A Burleigh drill and air compressor were taken into the Gladiator mine, on July 18th, for use in that property.

Placer miners are busy now along all the streams and gulches of the county washing out gold, and reports generally are to the effect that they are meeting with good success.

Alex. Thompson has just moved the old boiler of the Bully Bueno mill, which was brought to the Groom creek country twenty years ago, to be placed on a mine there recently purchased by Dr. Butler.

R. M. Dougherty came in July 18th from the Crowned King mine, on a business trip to Prescott, being his first visit here for a year. Mr. Dougherty is one of the old time miners and prospectors of this section, one of the this section one of the small army of brave and courageous men who built the first trails over our mountains while standing off hostile Indians and blazed the way for civilization. He prospected in the Bradshaw mountains before any trails were ever made there and located claims there over thirty years ago, and still owns some promising properties, which he is developing.

The old Peck mine which has in times past yielded over a million dollars and which has furnished many surprises to its owners, has just added another surprise in the shape of a rich body of ore. The mine is a whimsical affair. Where rich ore has been expected it has failed to appear and oftentimes where it was least expected to be found has been the place where it has been discovered. The latest strike has been one of the last named. About fifty feet from the vein, which has been worked for the past twenty-five or thirty years, and right on the surface where it has been trodden over all these years by miners, foremen, superintendents, mine owners, lessees of the mine and, mining experts, a good sized vein has been discovered the ore from which goes over \$1,200 per ton. The discovery was made only a few days ago and it has naturally aroused considerable interest in this old camp. The vein has all the appearance of permanency as far as they have developed it and a cross cut will probably be run from one of the lower levels for the purpose of cutting the vein at a greater depth. Pat Donlan, one of

the old standbys of the Peck camp also struck a very rich pocket of silver ore recently in one of his mines in that district. While it was not very extensive the ore was quite rich and he has hopes of striking it again. This old camp gives promise yet of coming to the front. *Prescott Journal Miner.*

Charles Lynch, John Sweicapher and J. H. Sample have gone out to the Nighthawk mine to work on leases on that great property.

Tom Burch is in from his rich silver mines, near the Hibernia. He says that rain fell in torrents all over Wallapai mountains Wednesday night July 15th.

It is reported that Thomas McMahon has ten thousand dollars worth of ore in sight in his Nighthawk lease and that other leasers are opening up big ore bodies.

T. L. Ayres is rapidly becoming one of the richest men in Mohave county from the sales of Eureka ore. The mine is now one of our heaviest producers and we rejoice with Mr. Ayres' many friends over his exceeding good luck.

Mr. Fox came in from the Liverpool Landing country July 13th, after mining tools and supplies. He and Clarence Harris have been prospecting in the lower end of the Chemehuevis mountains and have made some wonderful discoveries of gold and copper. Not having any drills or powder they were unable to do any work on the claims, but from specimens of gold rock exhibited here they are on the high road to wealth. The rock was a mass of gold. The copper rock will average about thirty per cent and carries gold and silver. The ledges are big and well defined. Mr. Fox says that the country is almost inaccessible and water has to be packed from the river fifteen miles away. No one who is unused to the desert country should go in there until the rainy season sets in. The whole country abounds in gold, silver and copper and we expect to hear of many wonderful discoveries in the near future. Many years ago the country around Liverpool Landing produced thousands of dollars in placer gold, but no effort was made to find the source from which it came.—*Mohave County Miner.*

The Sundance mining company which is operating the Silver Trail and Thorne mines on the Hassayampa in Maricopa county shipped a car load of ore recently which went \$66.83 per ton. The company is preparing for the erection of a mill on this property.

Five large bars of silver copper bullion, valued at about \$2,500 was brought into Prescott July 21st from the Tiger mill and was shipped the next day to San Francisco. The ore from which it was obtained was taken from the Rapid Transit mine in the vicinity of Prescott. This mine can now be placed on the list of regular bullion producers if it is worked.

McDonald & Boyle have obtained ore from the bottom of the shaft of their Bald Butte which goes \$100 per ton in gold. They have about fifty tons of good milling ore on the dump of their mine. This claim, while but little developed as yet, shows up well and gives promise of developing into a big mine. It is located only a few miles from Prescott.

A deed from J. B. Tomlinson to the Brown-Dake Gold Mining Company has been filed for record, which conveys the Rochester claim on the Hassayampa for \$1,000.

CLIFTON.

The Home of the Arizona Copper Company.

There is probably no town in the territory of Arizona today, so peculiarly situated as is the town of Clifton. Up in a dark, deep canyon, whose perpendicular walls rise to a height of several hundred feet lies the seat of one of the largest copper camps in the world. This company has invested upwards of \$3,000,000 in mines, railroads, reduction works and appliances for making the ores return a revenue. They employ more than 300 men and distributes \$35,000 per month among its employes, as shown by the pay rolls.

Five hundred tons of pure copper bullion is realized from four thousand tons of ore per month. It is concentrated to four per cent and is then subjected to a leaching process which leaves but 1½ per cent. copper in the tailings.

A narrow gauge (26 inch) railroad is used to transport the ores from the mine to the works. The best of the claims at present is probably the Metcalf and has been worked steadily for about twelve years, with still plenty of ore in sight. Ore is also worked from the Longfellow, which has always been a noted producer. There has been a number of claims recently opened up that have proven surprisingly rich.

Superintendent Colquhoun is one of the best mining men in the southwest. He is at present in Scotland on a visit to his old home.

The company also has a large store where supplies of every sort are kept on hand.

Clifton will continue for years to be the center of one of the great mining districts of Arizona and will be a source of handsome profit to its owners as well as its employes.

A rich strike of silver ore is reported in the Monte Christo mine on Groom creek about six miles from Prescott. The ore is from a depth of 160 feet, and is held together by wire silver of immense wealth, and in addition to the nugget, carries much value in gold sulphurets. The Monte Christo is owned by Messrs. Nolan and Hutchinson.

CALIFORNIA.

INYO COUNTY.

One of the Coming Mines.

Over east of the White Mountains is a section which will as development goes on show that it is one of Nature's treasure houses. In that rich mineral region a mine which will be heard from later is the Red Jacket owned by R. J. Whitaker and Antone Cunha.

The Red Jacket is located about 8 miles south of the Tule Canyon placers. The croppings of the ledge show up strong the full length of the claim, and on the surface will average 30 inches in width, with a pay streak from 6 to 15 inches wide giving \$40 per ton free gold and a trace of silver. The ledge has a dip of 12° easterly, and runs northerly. The owners started a tunnel about 50 feet below the croppings, and on striking the ledge began to sink. At 12 feet depth the vein held its original width and gave about the same assays in the pay streak and \$20 in the wider portion. After sinking 65 feet drifts were run 42 feet southerly and 37 feet northerly. The former shows a pay streak a foot wide assaying \$92 per ton and the northerly drift shows about the same as where the shaft was started. At the bottom of the shaft the ledge is nearly 3½ feet wide, with a 9-inch pay streak, and quartz seams in clay giving \$20 assays.

The ledge is red and brown oxidized porous quartz, and the pay streak is on the foot wall. The country rock is syenite, the ledge having clay slip walls.

The first southerly extension of the Red Jacket is called Lena, and is owned by F. E. Smith. The first northerly extension, the Jupiter, is owned by Tom Jagers, but no work has been done on either of these claim.

The nearest water is a 70-foot well two miles distant, the quantity being sufficient for milling but not enough for any power except steam. Wood is abundant and there are good roads to mine and water. It is about 5 miles to Cottonwood creek. A horse aratra has been built.

Pete Keyser lately shipped 4400 pounds of silver rock from his mine in Alida Valley, to Selby & Co., and received in return after paying all expenses, \$3412. Silver glance and native silver constituted the ore. That looks like a bonanza itself. *Inyo Register.*

KERN COUNTY.

Mr. Dye and a party of prospectors from Bakersfield have struck a rich deposit of gold on an extension of the Frank Heald ledge. This famous ledge runs from the Sandstone at the foot of Black Mountain to Cow Wells, a distance of 25,000 feet, and is easily traced by the hanging and foot walls which are 600 feet apart.

Reports of the discovery of a rich gold-bearing quartz ledge comes from the Randsburg country. Si Drouillard with Vene and Elmo Pyle have been prospecting on the desert for some months, and on Wednesday, July 22d, Si Drouillard returned to Bakersfield with some rich samples of ore. Drouillard says the ledge is about three feet wide and can be traced on the surface for fully 6,000 feet. There is also a parallel vein which falls within the width of their claims the richness of which is not fully determined. The main ledge, however, at the places where he prospected it he thinks will pay from a few hundred to a couple of thousand dollars a ton, and the rock will be easy to work. It is about nine miles from the famous Moer & Singleton mine of Randsburg.

Guy Stockton came down from Mojave July 21st. He says the interest in mining matters out on the desert is on the increase and there are strong indications that there will soon be some money spent in substantial development work. The night he left Mojave, J. C. Campbell of the law firm of Reddy, Campbell & Metson, came in with a party of five en route to the mines. The law firm in question has a one-fourth interest in the Moer & Singleton mine and Mr. Campbell was going out to see what should be done with the property. He had a surveyor with him and it was reported that he was going to have a line run for a pipe line to carry water to the place where a mill is to be erected. If the water supply can be secured, it is reported that a mill of fifty stamps will be erected for working their own ore and to do custom work.—*Bakersfield Echo.*

LOS ANGELES COUNTY.

The Red Rover.

Since our last issue July 8th, we had the misfortune to have a fire in Acton. The purifying plant of the Red Rover mine, located on Fourth street, caught fire recently and before assistance could be rendered the buildings were totally destroyed and the water-

tank and shaft were partly burned. It was at first thought the machinery was a total loss, but all of it came out O. K. The origin of the fire was a spark dropped into the wood pile. Work was begun at once, and three days more everything was working fine, and the pump has been going ever since, day and night. J. Raine and Dick Dun are engineers.—*Acton Rooster.*

Work on the Esparanza mine near Acton will begin at once, some very fine rock having been taken out there.

Henry T. Gage, Esq., was in Acton about the first of July, looking after his mining interests. There is no let up on the Rover; but work continues day and night, some of the finest rock having been struck on the sixth level lately. The mine will soon be lighted with electricity, and will be the first mine of Southern California lighted by electricity.

Development work on the New York mine at Acton is being steadily pushed. This mine has a well defined vein and will, in time prove to be one of the best mines in this section of the State.

MONO COUNTY.

The Mono has changed hands. The entire board of old directors has resigned and a new board has been elected. N. Westheimer has been elected President, S. L. Ackerman vice president, R. G. Brown superintendent and M. E. Willis secretary. The Eastern and San Francisco people represented by Mr. Westheimer now have control of the Standard Consolidated, Bodie Consolidated, Mono, Bulwer Consolidated, Summit and several other mines, in the Bodie district.

RIVERSIDE COUNTY.

There is some talk of erecting a stamp mill in Perris and many of the business men are becoming very interested in the scheme as it cannot do else than benefit the community to a large extent and prove a convenience to the many prospectors in that section. There are numberless claims in the vicinity of Perris and the owners carry their ore to one of the large mines to have it crushed. Perris is a convenient center and a mill there, will be well patronized.

A shift of nine men are now kept constantly at work in the Dominion mine just west of Elsinore. This mine was the original find and its good paying rock is what caused so many to stake claims in its immediate neighborhood. The ore is shipped to Denver for smelting.

The silver mine, which is situated southwest of Elsinore and which has been lying idle for some time past, owing to the low price of the white metal, was started up last week. The mine belongs to Eli Waters and others who are now at work getting out ore in large quantities.

The famous Burcham & Moore mine at Eagle Mountain, near Walters Station, is reported to have been sold to a New York capitalist for \$200,000. There has been \$10,000 cash paid upon the property, and the New York parties are upon the ground making the necessary arrangements for taking immediate possession.

SAN BERNARDINO COUNTY.

Walter Wagner of San Bernardino received word that his partner in a prospecting trip, A. B. Montijo, had made a rich strike on the range in the vicinity of the Rose mine, and judging from the ore specimens sent in, there is reason to believe that the prospect is an exceedingly rich one.

The ore was uniform in appearance and was fairly filled with free gold. No assays have been made but it is reasonable to presume it will go at least \$200 a ton. The word sent in is that the claim of 1500 feet has an exposed and well defined ledge for the entire length, and the appearances indicate that the ore submitted is only an average specimen.

The shaft of the Iron King mine is down sixty feet all in ore. There is an eight foot vein and contains iron as well as gold. Loads of ore have been shipped away as it requires the best appliances to work the ore, and when the result of the shipment is received the value of the mine can be approximated.

The claim is located about twenty miles from the Virginia Dale and about fifty miles from the rail road station the nearest point being at Walters on the Southern Pacific. The mine is owned by San Bernardino parties, and if the developments are equal to the present prospected, it will prove a rich find for the lucky ones. Water is scarce at present, but can be developed by wells.

Sale of the Rose Mine.

Although the Rose mine is in San Bernardino county it was an investment by Riverside capitalists that had its ups and downs in a manner to send their hopes and aspirations of wealth from one end to the other of the financial thermometer in a way that was at times decidedly unpleasant.

When first opened an expert manager was put in charge, with the result that assessments were much more frequent than dividends, and some of the owners touched the bottom dollar of their pile in keeping the works going. It was claimed the manager took a delight in purchasing every form of machinery that was offered him, until a fortune was invested in this useless material, and a halt was called. The manager was sent away Dr. K. Shugart took his place, with the result that prospects brightened considerably as the work progressed under his careful and economical management.

This valuable mine, as it proved to be when properly worked, has been sold for \$100,000 to parties who have ample means to continue and extend the work of development. The purchasers are R. L. Grant of Chicago and O. O. Howard jr., nephew of Gen. O. O. Howard. Both men are millionaires, and Mr. Grant is largely interested in Colorado, having recently sold one at Cripple Creek for \$300,000.

Although the deal has been in contemplation for some time, it was only last week that the mine was turned over to the new owners. The first shot after the change opened up a new body of ore that will run from \$30 to \$40 per ton, and the management are enthusiastic over the brilliant prospects before them.—*Saturday Review.*

SAN DIEGO COUNTY.

Archie Thompson was granted judgment in Judge York court at Los Angeles July 28th for the full amount asked for in his suit against the Gold King Mining Co. and the Banner Mining Co. The suit was for the recover of money due for services.

LOWER CALIFORNIA

The Fortuna Gold Mining and Milling Company of Salt Lake which has been incorporated at Ensenada with a capital of \$1,000,000, divided into 100,000 shares of \$10 each, is to be listed on the Consolidated Exchange of New York. Gay Lombard is president and general manager; B. L. Harding, vice-president; W. H. Dale, secretary and treasurer. The property which is being developed by the company is located at Agua Dulce Canyon in the Zaragoza district, Lower California.

MEXICO.

Mr. McCurdy, the Secretary of the Jesus Maria Mining Co., whose mines are at Jesus Maria, Chihuahua, Mexico, has just arrived in the City of Mexico from an inspection of the property, and intends leaving for his home in Cripple Creek, Colorado, shortly. He says that the prospect at the mine even surpasses the several reports made by experts during the past six months, and that without doubt they have a great "bonanza." They are now breaking down ore with a ley of \$400.00 to the ton and in fact this may be taken as a general average of the whole mine. The company purpose to immediately increase the extraction to the utmost that the extensive workings will admit of, having at present in sight, and blocked out, over \$1,000,000 of gold and silver bearing ores; a large general store has also been stocked with supplies for the many employees needed in their business, and we understand that Mr. Williams, representative of the Ellis Engine Co., of Milwaukee, has arrived in the City of Mexico from Milwaukee, to make estimates on the plant needed. Mr. Statton, the well known millionaire mine owner, also of Cripple Creek, Colo., is now experimenting on a new system by which the company will treat this immense body of ore, just as it comes from the mouth of the mine, in the most economical manner.

A. E. Milliken, it may be remembered, sold one half interest in this valuable property two months ago, for the sum of one million dollars.

The Goldfields of Mexico, Limited, was registered in London the 15th of June, capital £100,000 in shares of £1 each, of which 100 are described as "adventurers' shares." Objects: To acquire the benefit of two bonds—each bearing date, 2d April, 1896—from Señores Don Martin Salido [father and son], to acquire mines, mining rights, &c., in Mexico and to develop and turn to account the same in such manner as the company shall see fit, and further to acquire any other mines, mining, water and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, etc., and to carry on the business of a mining, milling, smelting and metallurgical company in all or any of its branches. To construct, maintain and work rail and train roads, piers, wharves docks and warehouses; to develop the resources of such lands, estates, etc., as may from time to time be acquired by the company, by clearing, draining, farming, planting and building thereon; as builders, contractors, farmers and graziers, stock raisers, shipowners, storekeepers, &c.

The following news has been received from the mining district of Sabinal:

The "Gran Central" mine belongs to Mr. Leijias, and is a heavy producer of high grade ore.

Mr. Palmer has just denounced 16 "pertenencias," in a chain of hills of this district and it is reported that he is going to exploit them on a grand scale.

Mr. Atilano Ibabe & Co. have obtained permission for the exploration of a piece of land, on which they have discovered ore running from 1000 to 2000 ounces per ton. It is comprised of lands between "Santa Juliana" and "Sabinal Viejo".

Located on the same side as the "Santa Juliana" is the "Santa Inez". Its ore is of iron, with a streak of silver. The silver will run from 30 to 70 ounces to the ton of 2,000 lbs. The "J. S. Kilsh Smelting Company" is exploiting this mine.

The "Mexico" now being exploited, is situated at the top of a high hill, to the east of the Sabinal and about two miles distant. Its ore runs from 60 to 500 ounces to the ton of 2,000 lbs. It is owned by Messrs. Atilano Ibabe and Rafael Chavez.

The "Santa Juliana" situated on a hill to the south of this district and about three miles distance, produces an abundance of carbonates, argentiferous lead and the ore also runs from 25 to 70 ounces per ton of silver, and about 30 per cent of lead.

The "Santo Domingo" located on a high hill about four miles to the south of the Sabinal, produces lead ore in abundance. Great quantities of carbonates are found and assay from 25 to 30 ounces silver to the ton of 2,000 lbs., and 25 to 70 per cent lead, and, a small quantity of gold. Its present owner is Mr. Britton Davis.

A smelting company of this district is smelting 20 tons of ore per day. Another furnace has been fitted up, the capacity of which is 30 tons but which has not begun at work yet. There is also another smelter in this district of 40 tons capacity daily and the ore extracted is sent to the United States.

It will be remembered that a few days since, notice was given that Mr. Patterson in company with several Americans from St. Louis Missouri, had passed through Villa Ahumada on their way to the Sabinal District for the purpose of paying it a visit of inspection, and if they found the state of affairs to their taste they were to put up an immense smelter and would buy some of the best mines. The result of the visit has not yet been ascertained. The Sabinal District is, taken as a whole, progressing finely and the amount of exploitation that has been done lately is remarkable.—*Two Republics.*

NEW MEXICO.

Hillsboro Mines Output.

Output of Hillsboro gold mines, for the week ending Thursday, July 23rd, 1896, as reported for *The Advocate*:

	Tons
Wicks Mine.....	...
Richmond.....	85
Happy Jack.....	55
Snake Group.....	90
Catherine.....	...
Key West.....	30
Prosper	70
Eighty-Five.....	65
Total.....	395

Total output since Jan. 1, 1896,—13,735.

About twelve years ago Pat Breen found and located a mine in Black Mountain near El Paso. He took out of a rich pocket about \$20,000 and then sold it to Texas parties for \$13,000. Two years ago he returned to New Mexico and found the mine abandoned. He located it again and has recently opened an eight foot vein of rich ore.

The leasers of the Lady Godiva mine near White Oaks encountered a porphyry dyke in the lead they are opening, and the vein was barren in the dyke. They passed through it July 15, and when the vein went in to the granite it was well filled with pay ore.

The Wicks mine has been closed down indefinitely, and the miners paid off and discharged. Supt. Williams will remain there in charge, to keep the water out and to look after the property generally.

HILLSBORO MINES AND MILLS.

W. F. Hall and S. J. Macy commenced work to-day on the Percha mine which they have under bond and lease. This is a silver-lead prospect carrying some gold and situated two or three miles below town on Percha river, in a lime and shale formation. The ore is a carbonate and the croppings show an average value 45 ounces silver, 40 per cent. lead and three dollars in gold. Such ore commands a premium at the smelters and is worth to the producer about \$45 per ton at Lake Valley.

Supt. Hughes has been pretty busy this week at the Snake mine, going over the ground with parties proposing to lease. Applications for the whole of the surface ground and for much of the underground have been received and forwarded to headquarters. Quite a number of bids have also been offered for the shaft sinking contract of 150 feet. Altogether we may expect to see the Snake properties actively and extensively worked in the future.

In the placer district there has been a remarkable increase in the yield of gold during the last few weeks. Many of the Mexican miners are averaging two dollars a day and others are doing well.

Scott & Owens have certainly struck a good thing in the Sherman mine and they are working night and day to make the most of it.

At the Richmond mine several men are employed in drifting and opening up new ground and ore bodies.

Deep mining has ever been assumed to be the prime necessity in this camp, and we are now about to see something done in that direction. The Eighty-Five shaft is being sunk steadily and will reach the 400 foot point next week. At the same time contracts to sink the Snake shaft to the 500 foot point will be let. In both mines there is a manifest improvement in the value and extent of the ore as it descends, and we may look for development to continue beyond these depths.

Silver City Mines.

(Silver City Enterprise.)

The new smelter of the Silver City Reduction Company is running steadily and turning out a copper matte product rich in gold and silver. The plant is a very complete one, consisting of a reverberatory furnace, and a Howell-White revolving furnace, either or both of which are used, as the requirements demand, for the roasting and desulphurizing of

the rich pyritic gold ores of Pinos Altos and other surrounding camps. The smelting furnace is built upon the latest and most improved pattern of copper smelting furnaces. The works have already produced several cars of matte although only in operation about ten days, already the good effects of the plant is felt in business circles, and is apparent in the increased activity in the various mining camps. Mines that have lain dormant for years have been put in active operation within the past ten days. Now that a home market is offered for the miners product, miners are seeking for opportunities to lease mines. The demand for mine supplies and miners outfits has increased, with good results to the general business. S. E. Brether-ton has proved his capability as successful metallurgist and has demonstrated that he can handle any and all of the ores produced in the territory and save nearly all of the values contained therein. The new smelter gives every evidence of being a permanent financial success for the promoters, and a positive factor in the welfare of this community.

CENTRAL.

A small force of men are at work in the Texas—Grand Central, which has been idle for some time. The men are mainly employed in keeping the water out, the timbers in repair, etc.

The Chance mine is being worked as usual. At the depth of 150 feet, the vein has materially increased in size as well as in value, and considerable quantities of ore are being extracted. The mine is destined to soon rank among the payers.

Ed Moulton has taken a lease on the Gulch mine which in years past had an enviable record as a producer. The mine will be retimbered and put in proper shape for active operations. A pump has been put in place, and hereafter the workingmen will not be troubled with water.

The Lost mine continues working a small force of men with satisfactory results. The ore chute increases in richness as development work progresses and the sublessees are reaping a harvest. The property would have been sold ere this has not some officious personage interferred and stopped proceedings. A party from San Francisco examined the property recently and made a favorable report, and it is quite probable that notwithstanding the back cappers efforts the sale may yet become an accomplished fact.

PINOS ALTOS.

Dr. Wood is sinking on his Golden Gate claim, one and a half miles northwest of town. The shaft is now down 40 feet and shows a body of copper and iron pyrites the full size of the shaft. The ore runs about 15 per cent copper and carries about \$9.00 per ton in gold and silver.

A. Hirschberger is having a mill run made, at the Stanley-Martin mill, of rich ore from his Western mine. Twelve men are employed at the mine.

On the Mountain Key the old workings at the 300 foot level are being retimbered and put in shape for further development and extraction of ore at that level. As soon as the 300 foot level is in proper shape the mine will be drained below to the 400 foot level and that will soon be order for the production of ore. And one after another down to 700 feet the old workings will be drained and repaired till the mine is entirely reclaimed and put upon a producing and paying basis as in the days of its prosperity. While the work of reclaiming the old workings is being carried forward,

the two upper levels are producing sufficient gold ore to pay all expenses.

The Golden Giant shaft has attained a depth of 360 feet at which depth sinking was suspended till a new cable was procured. Sink has been resumed and will be pushed vigorously. The Golden Giant has proven one of the greatest gold producers of the southwest. Since the mill was started there has been a constant product of from 400 to 600 ounces of gold per month on the plates at the mill and about 200 ounces more has been obtained monthly from the concentrates shipped to the smelters. The mine has improved steadily in size of vein and quality of ore. The second level has produced nearly twice as much gold as the first level and the third level fully twice as much as the second from the same extent of territory worked. Forty men are employed at the mine and mill.

Bell & Stephens are sinking the new shaft upon the Mina Grande mine. The shaft has attained a depth of 120 feet and will be sunk to a depth of 160 feet at which depth levels will be run. Seven men are employed on two drifts sinking, this force will be increased as soon as the levels are started. On the Pacific, the same firm has 19 men employed. Shaft No. 1 has reached a depth of 40 feet and drifts are being started on the vein. The ore from the two mines is being stored in the yard at the mill waiting till the water supply is replenished by the rainy season, when the mill will be started again.

BALD MOUNTAIN.

C. P. Crawford and James Woodward have five men at work on the Big Casino mine. The principal value of the ore is in gold.

CAMP FLEMING.

This long idle camp is again showing signs of activity. Messrs. Sapp & Hannas have started work upon the famous Old Man mine, five miners are employed.

PASCHAL.

Martyr, Rascom & Co. are sinking on their New Albany copper claim. The last shipment of ore ran 39 per cent copper.

Thompson & Chapman are working the Colwell copper mine and taking out rich copper ore.

WHITE SIGNAL.

The boiler and engine are being put in place at the Elnora company's mill and it is more than probable that the plant will be producing gold bullion from the ores of Elnora mine before many days have past.

GENERAL NEWS

PATENTS.

Messrs. Hazard & Townsend, solicitors of patents, room 9 Downey Block, Los Angeles, California, report the following recent patents of interest to mining men:

July 7.—No. 563,702.—Maching for Crush and Pulverizing Ores. J. C. Wiswell, Medford, Mass. This consists of a crushing pan having balls arranged thereupon, and cup shaped rolls having their axes vertically arranged and each covering two of the crushing balls and adapted to be revolved around the pan and rotated upon their own axes.

July 7.—No. 563,705.—Almagator. E. S. Bennett, Denver, Colorado. A tank having inclined sides and valleys formed in its bottom, each valley having a longitudinal row of upwardly projecting nozzles connected with air or water supply source, and aperatured

pipes located on each side of said nozzles and arranged to reciprocate, thus to produce constant agitation of the material being amalgamated.

July 7.—No. 563,604.—Hydraulic Mining Machinery. T. B. Ludlum, Denver, Colo. A sluice is provided at its discharge end with an upwardly projecting pipe leading to a higher sluice. Material is fed into the lower sluice and a stream of water directed upon it to wash it throughly, and a second stream of water under pressure is directed from the bottom of the lower sluice up trough the inclined pipe leading therfrom to carry the material from the lower sluice into the upper one.

July 14.—No. 563,805.—Amalgamator. W. H. Rockfellow, Baker City, Oregon. The principal feature of this invention consists of a mercury box having a partition extending nearly to the bottom and a deflector plate on the bottom of the partition thus to cause the material to be amalgamated to pass under the deflecting plate and through the mercury bath before being discharged from the amalgamator.

July 14.—No. 563,380.—Concentrator and Amalgamator. J. B. Rossman, St. Paul, Minn. An amalgamator having its bottom provided with fixed transverse dividing strips, and openings in a side of the shaker between the transverse strips.

July 14.—No. 269,039.—Crusher Mill. J. Walker, Chicago, Ill. This is a Chilian mill having its vertical shaft provided with a vertically sliding box in which the shaft of the crushing rolls is journaled, thus to allow the rolls to move up and down independent of the shaft.

July 14.—No. 563,769.—Process of desilverizing lead bullion. W. F. Howard, Pueblo, Colo. An improvement in Park's process of desilverizing lead bullion which consists in subjecting the zinc crust to pressure after removing it from the desilverizing kettle.

July 21.—Nos. 564,508 to 564,510 inclusive. Auger and Reamer for Mining purposes. Three patents. R. H. Elliott, Birmingham, Alabama, Assignor to the Alabama Blasting and Mining Company same place. These patents are for certain improvements for drilling, by means of an auger, then stopping the auger and reaming out a cavity to receive the blast charge.

July 21.—No. 564,423.—T. A. Edison, Llewellyn Park, New Jersey. Process of separating copper pyrites from iron pyrites, which consists in separating the crushed ore containing both pyrites into different lots of particles of approximately the same size, then heating each lot separately to make the copper pyrites magnetic, while the iron pyrites remain non-magnetic, and then separating the copper pyrites by magnetic action.

Copies of these patents may be obtained for five cents each (no stamps) by addressing the Commissioner of Patents, Washington, D. C. giving the date, number of patent, name of inventor and title of invention of each patent ordered.

The money in circulation in the United States amounts to between \$1,500,000,000 and \$1,750,000,000, divided approximately as follows: Nickel and copper coins, \$20,000,000; silver coin, \$120,000,000; gold coin, \$480,000,000; paper currency, \$1,000,000,000.

The trolley system, introduced in the deepest level of the United Verde Company's mine for the handling of ore, has turned out to be a success in all respects.

Largest Casting Made in Mexico.

The Compania Industrial's order, No. 5328, is the largest casting ever made in the republic of Mexico. It is a cylinder, five feet in diameter, 11 foot stroke, and weighs 16,000 pounds. The casting came from the foundry without a flaw, and could not have been made better by any foundry in the United States. The company has turned out heavier work, but none before as complicated and requiring as skilled workmanship. George R. Lunt and Wm. Farrant are superintending the boring. This is the only shop in the republic that has the capacity for running out this work. The cylinder is being made for Compania Minera de San Rafael, at Zacatecas, and is a duplicate of one made in England forty years ago for this company. The Company Industrial made a contract with the Compania Restauradora de Guanacevi, last February, amounting to \$250,000. The Compania Industrial is owned entirely by Mexican citizens. They commenced with a small plant eight years ago, but have kept branching out, investing about \$100,000 each year, last year they invested \$150,000, and have now the largest plant of the kind in Mexico. They employ 350 men, 90 per cent of which are Mexicans; they encourage Mexican labor. Although they have not had the advantages and opportunities presented the American people, they make good machinists. The company is now talking of putting in a steel-casting plant, which bids fair to be a large and prosperous enterprise, one that Chihuahua may well be proud of.—*Chihuahua Enterprise.*

The Bland, N. M., Herald—weekly, vol. 1, No. 4, is on our exchange table. It is a bright, newsy little sheet, published in the great Cochiti mining district. The *Herald* deserves, and doubtless will receive, the hearty and substantial support of every business man and mine owner of the district.

Messrs. Thomson & Boyle, the enterprising business men who have recently secured control of the water-pipe and well-easing works, formerly owned and controlled by J. F. Holbrook, at 310, 312 and 314 Requena street, Los Angeles, Cal., will continue to manufacture all kinds of water-pipe, well-easing, steam boilers and oil tanks. See their ad. on page 11.

Not even gold mines exceed in dividend-producing capacity some of the country's big copper mines. On May 1st, the Anaconda Company paid a \$750,000 dividend. On the 13th ult., the Calumet & Hecla, Michigan, paid a \$500,000 dividend, making an aggregate to date of \$45,850,000 profit to its stockholders.

Number one, volume one, of the *Los Angeles Mining and Stock Exchange Bulletin* was issued July 5th. It is bright and newsy, giving many facts of interest pertaining to the mining industry of Southern California.

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PERSONAL—NEWS ITEMS

Sam Hubbard, jr., the energetic mining man of Spruce Mountain, was in Prescott, Arizona, last week on mining business.

John Gird came into Tombstone, Arizona, from the Dragoon mountains, the first part of last week.

Hon. W. A. Rowe left Prescott, Arizona, last week, for his Slate Creek mines, east of Prescott, and will resume work immediately.

D. P. Carr, of Silver City, N. M., stopped over in Deming, July 20th, on his return to Silver City from St. Louis.

W. A. Long, the rustling and successful miner, is at Prescott, Arizona, in from his favorite mineral section, Lynx Creek.

S. M. Kelsey, of the Lost Horse Mining and Milling Co., of Pinion mountains, Riverside county, Cal., has gone to Kansas City, Mo., for a six weeks vacation.

Sidney E. Davis, of St. Louis, Mo., has just returned to Phoenix, Arizona, from a trip to the Cave creek country, where he has been looking over some mining property.

Robert Gardner, of Julian, Cal., was a visitor at the JOURNAL office last week. Mr. Gardner is here on business, and is very enthusiastic over the Julian district.

Theo. B. Comstock, of Prescott, Arizona, was in Kingman last week, looking over the Elkhart mine near that city.

Mr. Wallace, a prominent attorney of San Francisco, Cal., and owner of some valuable mines across the river from Kingman, Arizona, is in that city.

Owen Stull, foreman of the Howard mine, near Prescott, Arizona, is visiting in Prescott.

James Wilson, owner of the Oro Platta, and other valuable properties in and around Kingman, Arizona, arrived in Kingman, the 18th ult., from St. Louis.

F. A. Jones, a mining engineer, is in Phoenix, Ariz., from the Humboldt district, where he is engaged in erecting a ten-stamp mill, to be run by a gasoline engine.

William Springer, who at one time was superintendent of the Cupel mine, near Kingman, was in Kingman the fore part of last week. Mr. Springer is putting in a concentrating plant for the Cedar Valley Mining Company.

Frank Nicholson, the mining engineer and expert, of Prescott, was in Phoenix, Arizona, July 24th. He has been examining some mining property in the Cave Creek country, just north of Phoenix.

S. A. Douglass, of Baldy, San Bernardino county, Cal., with his partner, W. P. Nolan, were callers at the JOURNAL office July 30th.

Richard Crowe, superintendent of the Yarnell mine at Yarnell, Yavapai county, Arizona, is in Prescott.

James Ellis, the prominent mining man of Los Angeles, was at Bisbee, Ariz., on a hasty business trip, July 18th.

Congressman Chas. N. Fowler, of New Jersey, arrived in Prescott, Arizona, July 21st, and left the same day for Big Bug onyx mines.

M. M. O'Gorman, of the Dragoon mountains, was in Tombstone, Arizona, the first of last week. He has some copper properties in the above mountains.

C. D. Lane, the California millionaire mine owner, who has been out looking at the Mocking Bird group of mines, near Kingman, is now in St. Louis, Mo.

W. E. Pomeroy, of Mesa City, Arizona, was in Phoenix the 25th ult. Mr. Pomeroy is a stockholder in the Goldfields Mining and Milling Company, of Goldfields, Arizona.

J. H. Leonard, recently of Death Valley, Inyo Co., Cal., was a caller at the JOURNAL office, the 17th ult. He will leave for Hedges, San Diego Co., Cal., some time this week.

G. W. Waterhouse, of San Francisco, was in El Dorado Canyon, near Kingman, Arizona, in charge of the affairs for the Southwestern Mining Company, during the illness of Mr. Mills.

Col. Wm. Herring, of Tombstone, Arizona, was in Prescott, July 22nd, and left immediately for the Bradshaw mountains, where he has some mines.

George Raum, one of the solid men of Wilcox, is visiting Phoenix, Arizona. Mr. Raum is interested in mining property near that city.

Joseph Upsher, who is well known to old miners of Mohave county, Arizona, is in the employ of an English company in Mexico.

Benj. S. Barrett, who is engaged in mining on Squaw creek, fifty miles north of Phoenix, Arizona, is in the above named city for the present.

T. J. C. Webster, our correspondent of the Virginia Dale mining district, was one of the many callers at the JOURNAL office July 29th.

J. E. Saint left Albuquerque, the morning of the 23rd ult., for the Ladrones mining district, where he is interested in some rich claims.

W. W. Halesworth, of Santa Ana, Cal., was in Los Angeles, the 30th ult. Mr. Halesworth is one of the owners of the famous Halesworth group of mines in the Virginia Dale mining district.

W. C. Wynkoop, manager of the Cochiti Mining and Milling Company's properties, arrived in Bland, N. M., from Denver, Colo., the 21st of July.

Paul McCourt has just returned to White Oaks, N. M., from Cripple Creek, Colo.

Capt. Kernahan came into Bland, July 21st, from the Santa Clara Canyon, where he is carrying on mining operations.

Messrs. Charles and Albert Richards returned to Ensenada from the Jacalitos mining district, in Lower California. Both gentlemen are familiar with mines, their father being the head of the Pueblo Smelting Company of Colorado.

M. T. Burgess, the mining man of Guadalupe, is in the City of Mexico.

Joe Peterson, superintendent of the Viznaga, at Alamo, near Ensenada, Lower California, was in San Diego, Cal., July 18th. He reports the stamps of the Viznaga still steadily dropping.

Salvador Salorio, of the firm of Bernstein & Salorio, surveyors, at Ensenada, Lower California, has just returned from the Jacalitos mining district, where he has been making some mining surveys.

Aurelio Bueno, the mining broker of the City of Mexico, left that city for Guanajuato, State of the same name, on mining business.

M. Luis Pegot is in Ensenada, Lower California, this week, from the Jacalitos district, where he is engaged in mining.

F. K. McNamara, amalgamator at the Piedad mine, in Lower California, has been in San Diego, Cal., since the 25th of July, for the benefit of his health and for a short rest.

W. Guggenheim, general manager of the Aquas Calientes Smelter, has gone to Zacatecas, Mexico, on a business trip.

OBITUARY.

An engineer, named A. Ralston, in charge of the engine on the hoist at the Mammoth Mine at Goldfields, Arizona, fell into the 170-foot shaft, July 21st, about 4 o'clock in the morning. He was running the night shift, and it is supposed that while dumping the car, he left the trap door over the mouth of the shaft open and somehow lost his footing. The unfortunate man fell head foremost to the bottom. His neck and both shoulders were broken.

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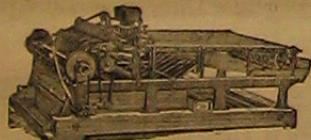
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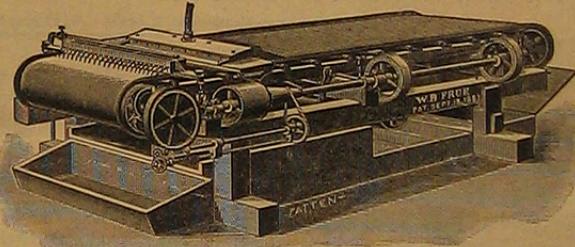
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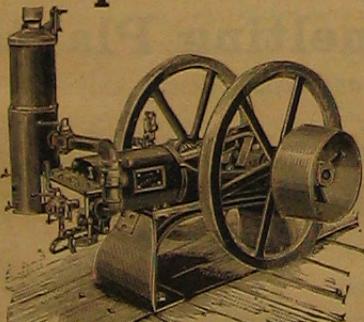
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BOSTON

Allouez	1 00	Franklin	12 00
Atlantic	18 00	Kearny	10 05
Boston & Mont'a	75 00	Oscela	25 00
Butte & Boston	3 00	Quincy	11 00
Cal. & Helca	300 00	Tamarack	85 00
Centennial	2 00	Wolverine	6 50

COLORADO SPRINGS STOCKS

Anaconda	56	Mollie Gibson	60
Blue Fox	05	Mattox	10
Columbine	03	Mount Rosa	10
Fanny Rawlins	10	Ophir	10
Gold King	53	Orphan Bell	13
Gold and Globe	22	Portland	1 45
Isabella	52	Work	12
Jack Pot	07	World	02 1/2
Jefferson	18	Del Monte	03 1/2
Monarch	08		

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METAL MARKET.

New York Quotations:

	SILVER.	COPPER.	LEAD.
July 16	68 1/2	11 25	2 90
" 17	68 1/2	11 25	2 90
" 18	68 1/2	11 25	2 90
" 19	68 1/2	11 25	2 90
" 20	68 1/2	11 25	2 90
" 21	68 1/2	11 25	2 85
" 22	68 1/2	11 25	2 85
" 23	68 1/2	11 25	2 85
" 24	68 1/2	11 25	2 90
" 25	68 1/2	11 25	2 90
" 26	68 1/2	11 00	2 85
" 27	68 1/2	11 00	2 85
" 28	68 1/2	11 00	2 85
" 29	68 1/2	11 00	2 85
" 30	68 1/2	11 00	2 85
" 31	68 1/2	11 00	2 85

HELENA, MONTANA

Alice	25	Granite Mount'	1 65
Bald Butte	3 55	Hope	1 50
Benton Group	10	Iron Mountain	45
Bi-Metallic	3 00	Ontario	1 00
Elizabeth	10	Poerman	40

NEW YORK.

Crown Point	45	Sierra Nevada	65
Con, Cal & Va.	40	Standard	2 75
Gould & Curry	40	Union Con.	53
Hale & Norcross	1 25	Iron Silver	10
Homestead	60 50	Quicksilver	3 00
Mexican	50	Quicksilver pfd.	17 02
Ontario	14 50	Bulwer	25
Ophir	1 30	Yellow Jacket	35
Plymouth	20	Deadwood	45

SAN FRANCISCO.

Alta	08	Mono	15
Belcher	47	Nevada Queen	05
Best & Belcher	6	Ophir	1 25
Bodie Con.	5	Potosi	35
Chollar	8	Savage	30
Con. Cal. & Va.	1 40	Sierra Nevada	63
Crown Point	45	Union Con.	52
Hale & Norcross	1 25	Utah	12
Mexican	45	Yellow Jacket	35
Gould & Curry	65	Bulwer	25

ST. LOUIS.

American Nettie	25	Elizabeth	20
Granite Mt.	1 60	Leo	3
Adams	60	Hope	1 40
Bimetallic	3 30	Small Hopes	80

SALT LAKE CITY

Ajax	85	Eureka Hill	120 00
Alliance	50	Horn Silver	2 05
Am. Nat. G's.	07	Little Pittsburg	03
Anchor	2 25	Lucky Bill	25
Apex	07	Mammoth	2 80
Bogart	25	Mearns	60
Bull, Beck	6 90	Mercur	7 10
Cane Springs	80	New Tropic	2 80
Cent. Eureka	70	Nevada	2 25
China Con.	45	New Eureka	05
Comstock	15	North Spy	2 40
Crescent	04	Ontario	14 00
Dalton	09	Silver King	16 25
Daly	8 50	Silver Spar	1 00
Daly West	7 70	Tetro	00
Elko	20	Utah	1 85

MEXICO

Name of Company	State	Price
Angustias	Zacatecas	\$ 250
Asturiana y Anexas	Chihuahua	440
Cerro Colorado	Chihuahua	10
Concepcion y Anexas	S. Luis Potosi	200
EI Oro	Guanajuato	80
do, pre,	"	00
Luis de Borda	Michoacan	30
do, Free stock	Hidalgo	200
Luis de Maravillas	"	1,000
Real del Monte	"	100
Rosario y Anexas	Durango	50
do, prof.	"	50
San Rafael del Oro	Guanajuato	600
Sta. Gertr y Anexas	Hidalgo	75
do, Fre Stock	"	15
Sta. Maria de la Paz	S. Luis Potosi	30
Tlauzinga	Puebla	40
Zomelahuacan (gold)	Vera Cruz	60
Zona Min. de Pozos	Guanajuato	70

NOTE.—The above Mexican stocks are figured on the basis of Mexican silver,

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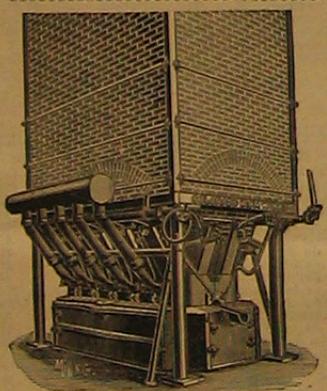
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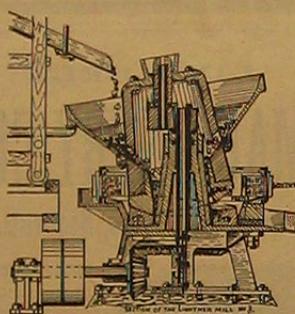
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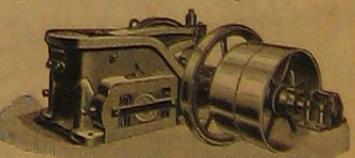
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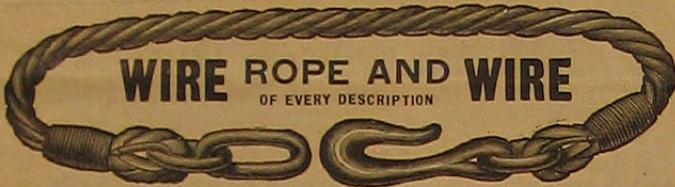
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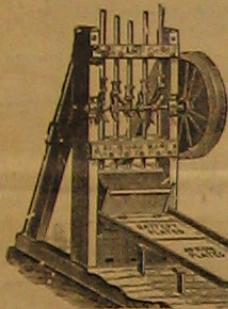
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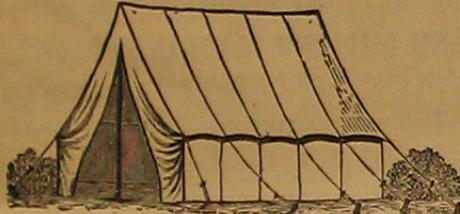
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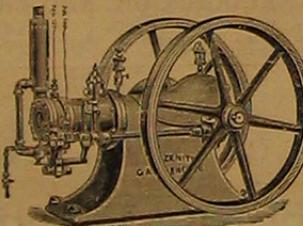
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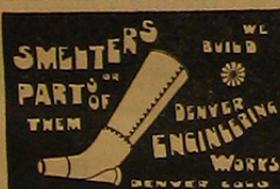
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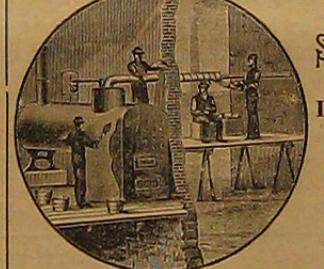
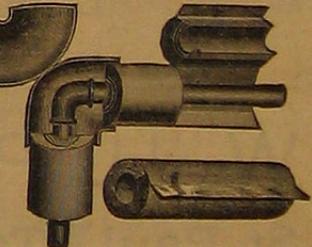
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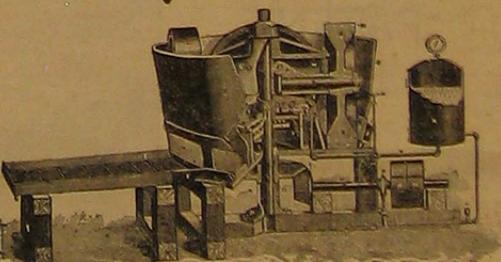
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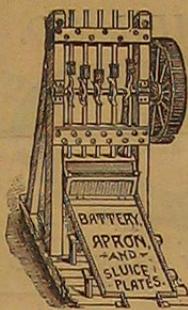
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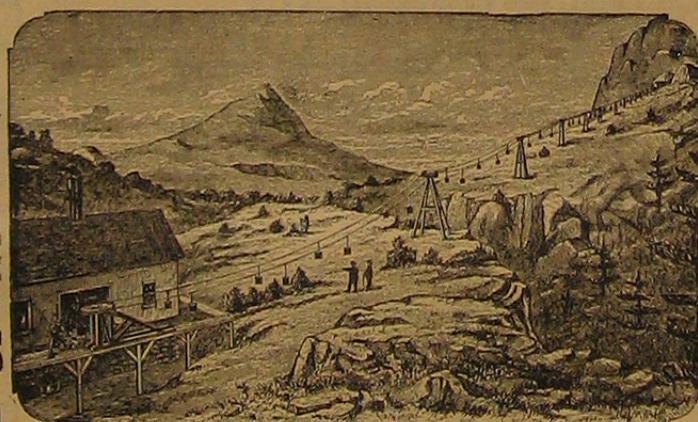
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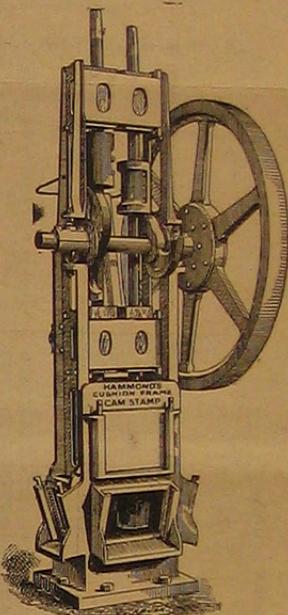
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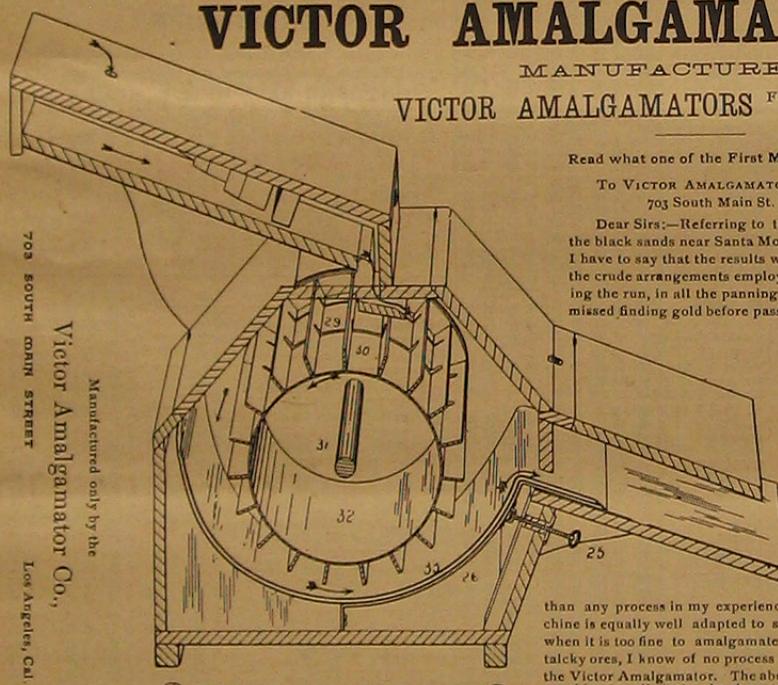
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Respectfully, GEO. O. KILBOURNE.

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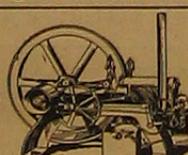
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Guaymas...Mex.	El Paso	10.00	11.50	13.50			
	Pueblo	12.50	16.00	17.00			
	Denver	15.00	16.50	18.50			
	Kansas City	15.00	17.00	19.00			
Ortiz ... "	El Paso	9.50	11.00	13.00			
	Pueblo	12.50	14.00	16.00			
	Denver	14.00	15.50	17.50			
	Kansas City	14.50	16.00	18.00			
Torres.	El Paso	9.00	10.50	12.50			
	Pueblo	11.50	13.00	15.00			
	Denver	13.00	14.00	16.50			
	Kansas City	13.50	14.00	17.00			
Hermosillo... "	El Paso	8.50	10.00	12.00			
	Pueblo	10.00	11.50	13.50			
	Denver	11.50	13.00	16.00			
	Kansas City	12.00	13.00	15.50			
Pesqueira ... "	El Paso	8.00	9.50	11.50			
	Pueblo	10.00	11.50	13.00			
	Denver	11.50	13.00	16.00			
	Kansas City	12.00	13.00	15.00			
Querobabi... Santa Ana. ... "	El Paso	7.00	8.50	10.50			
	Pueblo	10.00	11.50	13.50			
	Denver	11.50	13.00	16.00			
	Kansas City	11.50	13.00	15.00			
Magdalena ... "	El Paso	6.50	8.00	10.00			
	Pueblo	9.00	11.00	13.00			
	Denver	11.00	12.00	14.50			
	Kansas City	11.50	13.00	15.50			
Imuris. "	El Paso	6.00	7.50	9.50			
	Pueblo	9.00	11.00	13.00			
	Denver	11.00	12.50	14.50			
	Kansas City	11.50	13.00	15.50			
Nogales A.T. ...	El Paso	5.50	6.50	8.50			
	Pueblo	8.00	10.00	12.50			
	Denver	10.50	12.00	14.00			
	Kansas City	11.00	12.00	14.50			
Calabasas... "	El Paso	5.50	6.50	8.50			
	Pueblo	8.00	10.00	12.00			
	Denver	10.00	11.50	13.50			
	Kansas City	10.50	12.00	14.00			
Sanfords. ... "	El Paso	5.50	6.50	8.50			
	Pueblo	8.00	9.50	11.50			
	Denver	9.50	11.00	13.00			
	Kansas City	10.00	11.50	13.50			
Crittenden ... "	El Paso	4.70	5.50	7.50			
	Pueblo	8.00	9.00	11.50			
	Denver	9.50	11.00	13.00			
	Kansas City	10.00	11.50	13.50			
Fairbank ... "	El Paso	4.40	4.40	8.50			
	Pueblo	8.00	9.50	11.50			
	Denver	9.50	11.00	13.00			
	Kansas City	10.00	11.50	13.50			
Fucson.	El Paso	4.35					
	Pueblo	8.00	10.50	12.50			
	Denver	10.50	12.00	14.00			
	Kansas City	11.00	12.00	14.50			
Benson.	El Paso	8.00	10.00	12.00			
	Pueblo	9.50	11.50	13.50			
	Denver	10.50	12.00	14.00			
	Kansas City	10.50	12.00	14.00			
Steins Pass, N. M. ...	El Paso	8.00	9.50	11.50			
	Pueblo	9.50	11.50	13.50			
	Denver	10.50	12.00	14.00			
	Kansas City	10.50	12.00	14.00			
Lordsburg ... "	El Paso	7.50	8.00	11.00			
	Pueblo	9.00	10.50	12.50			
	Denver	10.50	12.00	14.50			
	Kansas City	11.00	12.00	14.50			
Silver City.	El Paso	3.20	4.70	6.00			
	Pueblo	6.00	8.00	9.50			
	Denver	7.50	9.50	11.50			
	Kansas City	8.00	9.50	11.50			
Hudson.	El Paso	3.00	4.50	5.50			
	Pueblo	6.00	8.00	9.50			
	Denver	7.50	9.50	11.50			
	Kansas City	8.00	9.50	11.50			
Deming.	El Paso	2.20	2.80	3.80			
	Pueblo	6.00	7.50	9.50			
	Denver	7.50	9.00	10.50			
	Kansas City	8.00	9.50	11.50			
Florida and Lake Valley.	El Paso	2.20	2.60	3.60			
	Pueblo	6.00	8.00	9.50			
	Denver	7.50	9.00	10.50			
	Kansas City	8.00	9.50	11.50			
Nult.	El Paso	2.20	2.40	3.40			
	Pueblo	6.00	7.00	8.00			
	Denver	7.50	8.00	10.50			
	Kansas City	8.00	9.00	11.00			
El Paso.	El Paso	6.00	7.50	9.50			
	Pueblo	7.50	9.00	11.00			
	Denver	8.00	9.50	11.50			
	Kansas City	8.00	9.50	11.50			
Rincon.	El Paso	1.50	2.00	3.00			
	Pueblo	6.00	7.50	9.50			
	Denver	7.50	8.50	10.50			
	Kansas City	7.00	8.00	11.00			

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Engle. ... N. M.	El Paso	2.20	2.60	3.60	5.00	10.20	6.00
Crocker. "	Pueblo	6.50	7.00	10.50	11.40	14.00	12.00
	Denver	7.00	8.50	11.00	12.00	14.00	12.00
	Kansas City	7.50	9.00	11.00	12.00	14.00	12.00
Lava. "	El Paso	2.20	2.80	3.80	5.00	10.20	6.00
	Pueblo	6.20	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
San Marcial.	El Paso	2.40	3.00	4.50	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Carthage.	El Paso	2.60	3.20	4.70	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
San Antonio.	El Paso	2.80	3.60	5.10	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Magdalena.	El Paso	3.00	4.00	5.50	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Socorro.	El Paso	3.40	4.40	5.80	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Albuquerque.	El Paso	3.40	4.40	5.80	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Bernalillo.	El Paso	3.20	4.20	5.70	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Wallace.	El Paso	3.40	4.40	5.80	5.00	10.20	6.00
	Pueblo	6.50	6.70	8.70	9.00	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Los Cerillos.	El Paso	3.60	4.60	6.10	5.00	10.20	6.00
	Pueblo	6.50	7.00	9.00	9.50	10.80	8.00
	Denver	7.20	8.70	10.70	11.20	13.80	11.00
Flagstaff, A.T. Prescott Jct.	El Paso	6.50	8.00	10.00	12.50	14.00	14.00
	Pueblo	9.00	10.50	12.50	14.00	14.00	14.00
	Denver	9.50	11.00	13.00	14.00	14.00	14.00
Peach Spgs. Hackberry.	El Paso	7.50	9.00	11.25	12.00	18.48	18.48
	Pueblo	8.00	9.50	11.50	12.00	18.48	18.48
	Denver	9.50	11.00	13.00	12.00	18.48	18.48
Kingman.	El Paso	7.50	9.00	11.25	12.00	18.48	18.48
	Pueblo	8.00	9.50	11.50	12.00	18.48	18.48
	Denver	9.50	11.00	13.00	12.00	18.48	18.48
Fenner.	El Paso	8.25	9.75	12.75	12.00	21.25	21.25
	Pueblo	9.00	10.50	12.50	20.00	22.00	22.00
	Denver	10.50	12.00	14.00	20.00	22.00	22.00
Bagdad.	El Paso	8.50	10.00	13.75	12.00	21.00	21.00
	Pueblo	9.50	11.00	13.00	20.75	22.00	22.00
	Denver	11.00	12.50	14.00	20.75	22.00	22.00
Mojave.	El Paso	9.00	10.50	14.00	15.75	22.00	25.00
	Pueblo	10.00	11.50	13.00	20.75	22.00	25.00
	Denver	11.50	13.00	14.50	20.75	22.00	25.00
Kramer.	El Paso	9.50	11.00	15.00	16.25	22.00	25.00
	Pueblo	10.50	12.00	14.75	21.00	22.00	25.00
	Denver	12.00	13.50	15.00	21.00	22.00	25.00
Mojave.	El Paso	10.00	11.50	16.50	17.75	22.00	25.00
	Pueblo	11.00	12.50	15.00	21.00	22.00	25.00
	Denver	12.50	14.00	18.00	21.00	22.00	25.00
El Paso.	El Paso	2.20	2.60	3.60	4.00	11.20	11.20
	Pueblo	6.00	7.00	8.00			

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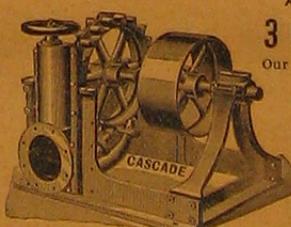
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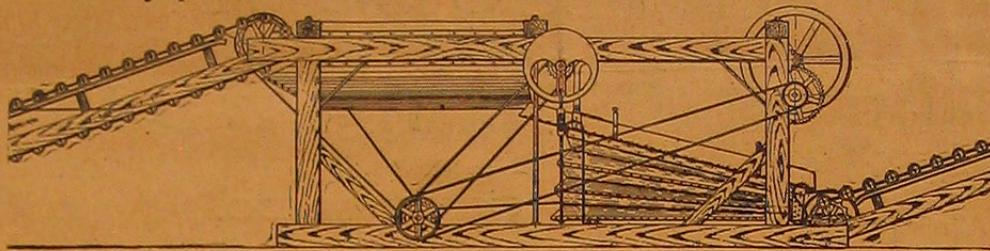
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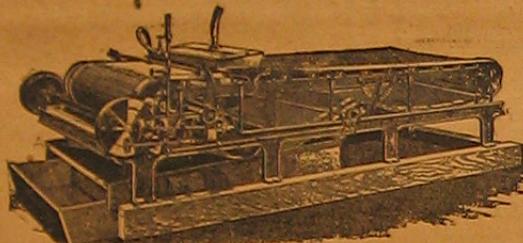
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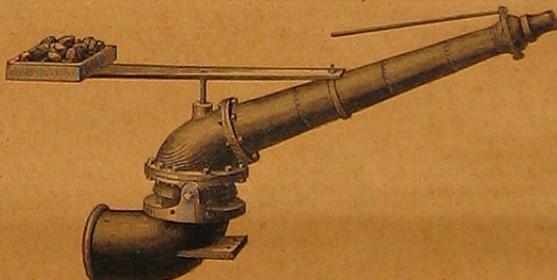
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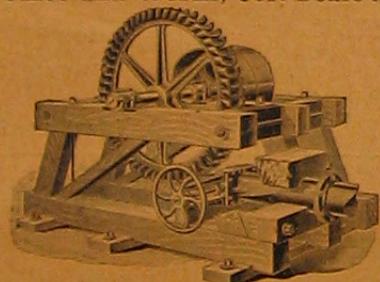
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